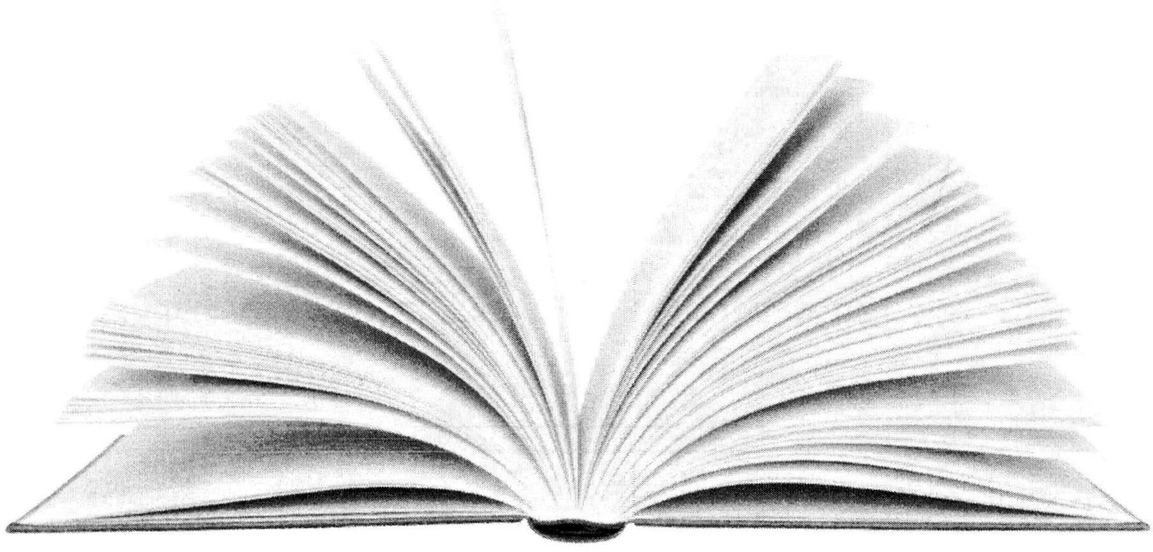
Assessment Highlights
Grade 3 Mathematics
2007

and

A Released Achievement Test



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This document contains both an Assessment Highlights report on the 2007 Grade 3 Mathematics Achievement Test and a full release of test items from the 2006 Achievement Test.

The Assessment Highlights report provides information about the overall test, the test blueprints, and student performance on the Achievement Test that was administered in 2007. Also provided is commentary on student performance at the *acceptable standard* and the *standard of excellence* on selected items (common to both the 2007 and 2006 Achievement Tests). This information is intended for teachers and is best used in conjunction with the multi-year and detailed school reports that are available to schools via the extranet. Beginning in 2007, **Assessment Highlights reports** for all achievement test subjects and grades (except Grades 3, 6, and 9 Français/French Language Arts and Grade 9 Knowledge and Employability courses) will be **mailed** to school administrators **every year** in the fall.

The released items include the 40 multiple-choice questions that formed the 2006 Grade 3 Mathematics Achievement Test. These released items are available only in print form because of copyright limitations. Also included are a test blueprint and an answer key that includes the difficulty, reporting category, test section, and item description for each test item. These materials, along with the Program of Studies and Subject Bulletin, provide information that can be used to inform instructional practice.

Released items from previously secured tests have been made available to teachers in print form. Print versions of released items, which contained approximately 25% of the total number of test items from previously secured tests, were mailed to school administrators each fall from 2004 to 2006.

Every second year, beginning in the fall of 2007, **a complete test** for all achievement test subjects and grades (except grades 3 ,6, and 9 Français/French Language Arts and Grade 9 Knowledge and Employability courses) will be **mailed** to school administrators as an attachment to the Assessment Highlights report for that year. In this way, teachers will receive complete forms of achievement tests. In the fall of 2009, the entire 2008 Grade 3 Mathematics Achievement Test will be released.

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The Alberta Education Internet address is www.education.gov.ab.ca.

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The 2007 Grade 3 Mathematics Achievement Test

This report provides teachers, school administrators, and the public with an overview of the performance of those students who wrote the 2007 Grade 3 Mathematics Achievement Test. It complements the detailed school and jurisdiction reports.

How Many Students Wrote the Test?

A total of 35 153 students wrote the 2007 Grade 3 Mathematics Achievement Test.

What Was the Test Like?

The 2007 Grade 3 Mathematics Achievement Test consisted of 40 multiple-choice questions based on four strands: Number, Patterns and Relations, Shape, and Space, Statistics and Probability.

The strands were integrated into the 40 questions. Therefore, questions on Number do not constitute the first section; rather, they were combined with the strands related to Patterns and Relations, Shape and Space, and Statistics and Probability, so they appear throughout the test. The knowledge and skills components were integrated into the test.

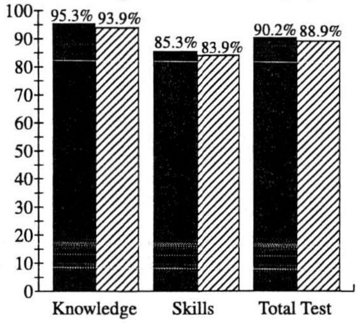
How Well Did Students Do?

The percentages of students meeting the *acceptable standard* and the *standard of excellence* in 2007 compared with 2006 are shown in the graphs below. Out of a total score of 40 on the test, the provincial average was 29/40 (72.3%). The results presented in this report are based on scores achieved by all students who wrote the test except those in French Immersion and Francophone programs; results for these students are reported separately. Detailed provincial assessment results are provided in school and jurisdiction reports.

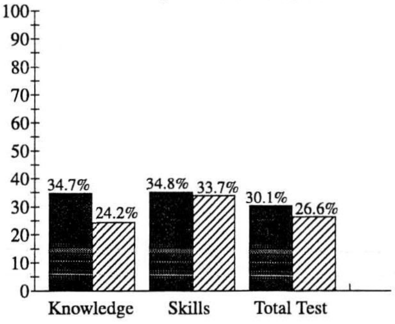
Grade 3—Acceptable			
	Knowledge	Skills	Total
2006	95.3	85.3	90.2
2007	93.9	83.9	88.9

Grade 3—Excellence			
	Knowledge	Skills	Total
2006	34.7	34.8	30.1
2007	24.2	33.7	26.6

Percentage of Students Meeting the *Acceptable Standard* (%)



Percentage of Students Meeting the *Standard of Excellence* (%)



■ 2006 Achievement Standards: The percentage of students in the province who met the *acceptable standard* and the *standard of excellence* on the 2006 Grade 3 Mathematics Achievement Test (based on those who wrote).

▨ 2007 Achievement Standards: The percentage of students in the province who met the *acceptable standard* and the *standard of excellence* on the 2007 Grade 3 Mathematics Achievement Test (based on those who wrote).

2007 Test Blueprint and Student Achievement

In 2007, 88.9% of students who wrote the test achieved the *acceptable standard* on the Grade 3 Mathematics Achievement Test, and 26.6% of students who wrote achieved the *standard of excellence.* These results are slightly lower than previous administrations of the achievement test.

Student achievement on the 2007 Grade 3 Mathematics Achievement Test averaged 29 out of a total score of 40 (72.3%).

The blueprint below shows the general outcomes that the questions address as well as the reporting categories under which questions are classified. The number of questions in each category is approximate.

General Outcomes	**Reporting Category**		**Provincial Student Achievement Average Raw Score and Percentage**
	Knowledge	**Skills**	
Number • Develop a number sense for whole numbers 0 to 1 000, and explore fractions (fifths and tenths) • Apply an arithmetic operation (addition, subtraction, multiplication, or division) on whole numbers, and illustrate its use in creating and solving problems • Use and justify an appropriate calculation strategy or technology to solve problems	▨	▨	12.1/17 (71%)
Patterns and Relations • Investigate, establish, and communicate rules for numerical and non-numerical patterns, including those found in the home, and use these rules to make predictions	▨	▨	4.2/6 (70%)
Shape and Space • Estimate, measure, and compare by using whole numbers and primarily standard units of measure • Describe, classify, construct, and relate 3-D objects and 2-D shapes • Use numbers and direction words to describe the relative positions of objects in one dimension using everyday contexts	▨	▨	8.8/12 (73%)
Statistics and Probability • Collect first- and second-hand data, display the results in more than one way, and interpret the data to make predictions • Use simple probability experiments designed by others in order to explain outcomes	▨	▨	5.8/8 (72%)
Provincial Student Achievement Average Raw Score and Percentage	12.7/17 (74%)	18.2/26 (70%)	**Total Test Raw Score** =43 (100%)

Commentary on 2007 Student Achievement

The following is a discussion of specific areas of strength and weakness demonstrated by students who wrote the 2007 Grade 3 Mathematics Achievement Test. Sample questions from the 2007 achievement test are provided to highlight these areas for students meeting the *acceptable standard* and for those meeting the *standard of excellence*. For each sample question, the keyed answer is marked with an asterisk. These questions are no longer secured and will not be reused on future achievement tests.

In the reporting category **Number**, students should be able to accomplish the following: develop a number sense for whole numbers 0 to 1 000, and explore fractions (fifths and tenths); apply an arithmetic operation (addition, subtraction, multiplication, or division) on whole numbers, and illustrate its use in creating and solving problems; and use and justify an appropriate calculation strategy or technology to solve problems.

Multiple choice **question 27** requires students to solve a problem using subtraction with 3-digit regrouping in the reporting category **Number knowledge**.

27. Altogether, 932 children went to the community centre last week.

There were 478 boys.

How many girls went to the community centre last week?

○ 564
○ 554
○ 464
*○ 454

Most of the students (67.9%) were able to answer this question correctly. This question required students to subtract 3-digit numbers (0 to 1 000) with regrouping, which can be challenging for some students. Option A was chosen by 8.0% of the students. Option B was chosen by 13.5% of the students and option C was chosen by 9.4% of the students. About 70% of students who met the *acceptable standard* were able to answer this question correctly, whereas approximately 93% of students who achieved the *standard of excellence* chose the correct response.

Multiple choice **question 40** requires students to solve a problem by using subtraction with 3-digit regrouping in the reporting category **Number skill**.

40. Zak's full water bottle holds 355 mL of water. After Zak takes a drink, 175 mL of water is left in the bottle.

How much water did Zak drink?

*○ 180 mL

○ 220 mL

○ 280 mL

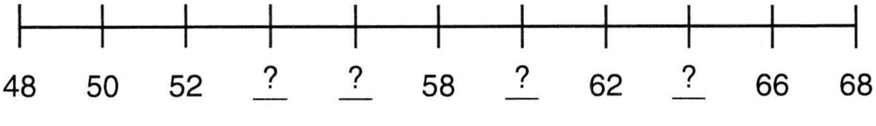
○ 530 mL

Most of the students (70.5%) were able to answer this question correctly. This question required students to subtract 3-digit numbers (0 to 500) with regrouping, which made it somewhat easier for the students. Option B was chosen by 15.7% of the students. Option C was chosen by 6.9% of the students and option D was chosen by 5.1% of the students. Approximately 71% of students who met the *acceptable standard* were able to answer this question correctly, whereas approximately 94% of students who achieved the *standard of excellence* chose the correct response.

In the reporting category **Patterns and Relations** students should be able to investigate, establish, and communicate rules for numerical and non-numerical patterns, including those found in the home, and use these rules to make predictions.

Multiple choice **question 2** requires students to use a number line to complete a number pattern in the reporting category **Patterns and Relations knowledge**.

2. A number line is shown in the math display.



Starting from the left, the missing numbers in the number pattern shown above are

○ 53, 54, 59, and 64

*○ 53, 54, 59, and 63

○ 54, 56, 60, and 63

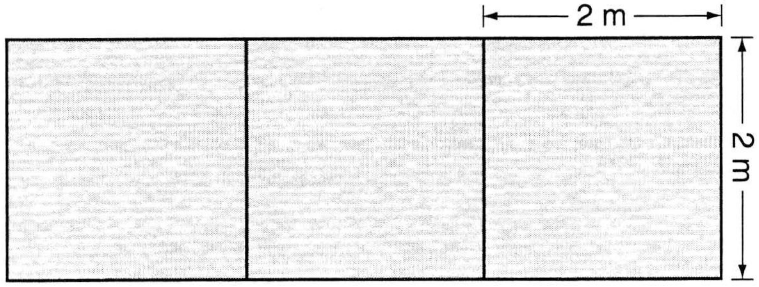
○ 54, 56, 60, and 64

The majority of the students (77.5%) were able to answer this question correctly. This question required students to use a number line to complete a number pattern. Option A was chosen by 5.8% of the students. Option C was chosen by 8.9% of the students and option D was chosen by 7.2% of the students. Approximately 83% of students who met the *acceptable standard* were able to answer this question correctly, whereas approximately 96% of students who achieved the *standard of excellence* chose the correct response.

In the reporting category **Shape and Space** students should be able to: estimate, measure, and compare by using whole numbers and primarily standard units of measure; describe, classify, construct, and relate 3-D objects and 2-D shapes; use numbers and direction words to describe the relative positions of objects in one dimension using everyday contexts.

Multiple choice **question 9** requires students to measure the perimeter of a given object using standard units in the reporting category **Shape and Space skill.**

9. Three floor mats are placed together to make one larger mat for the children to sit on.



The perimeter of the larger mat is

○ 12 m

*○ 16 m

○ 20 m

○ 24 m

Many of the students (74.7%) were able to answer this question correctly. This question required students to measure the perimeter of a given object using standard units. Option A was chosen by 9.1% of the students. Option C was chosen by 8.1% of the students and option D was chosen by 7.5% of the students. Approximately 77% of students who met the *acceptable standard* were able to answer this question correctly, whereas approximately 91% of students who achieved the *standard of excellence* chose the correct response.

Multiple choice **question 33** requires students to measure time in minutes that will elapse for a given activity in the reporting category **Shape and Space skill**.

33. A presentation about rocks begins at 1:15 P.M. and ends at 2:00 P.M.

How long is the presentation?

○ 60 minutes

*○ 45 minutes

○ 30 minutes

○ 15 minutes

Many of the students (70.6%) were able to answer this question correctly. This question required students to measure time in minutes that will elapse for a given activity. Option A was chosen by 16.1% of the students. Option C was chosen by 7.3% of the students and option D was chosen by 4.2% of the students. Approximately 74% of students who met the *acceptable standard* were able to answer this question correctly, whereas approximately 95% of students who achieved the *standard of excellence* chose the correct response.

In the reporting category **Statistics and Probability** students should be able to: collect first- and second-hand data, display the results in more than one way, and interpret the data to make predictions; use simple probability experiments designed by others in order to explain outcomes.

Multiple choice **question 24** requires students to obtain new information from data given in a chart, apply addition to two different sets of numbers and then subtract the sums in the reporting category **Statistics and Probability skill**.

Skipping Ropes

Colour	Number
Blue	3
Red	6
Purple	11
Green	26

24. How many more red and green skipping ropes are there than blue and purple skipping ropes?

- ○ 28
- ○ 22
- *○ 18
- ○ 12

Only 58.6% of the students were able to answer this question correctly. This question required students to obtain new information from data given in a chart, apply addition to two different sets of numbers and subtract the sums thereby completing a multi-step question. Option A was chosen by 15.4% of the students. Option B was chosen by 13.6% of the students and option D was chosen by 11.3% of the students. Approximately 58% of students who met the *acceptable standard* were able to answer this question correctly, whereas 87% of students who achieved the *standard of excellence* chose the correct response

Achievement Testing Program Support Documents

The Alberta Education web site contains several documents that provide valuable information about various aspects of the achievement testing program. To access these documents, go to the Alberta Education web site at www.education.gov.ab.ca. On the home page, click on "Kindergarten to Grade 12," scroll down and click on "Provincial Testing," and then click on the link for "Achievement Tests." On the "Achievement Tests" web page, you can access the following documents:

Achievement Testing Program General Information Bulletin

The General Information Bulletin is a compilation of several documents produced by Alberta Education and is intended to provide superintendents, principals, and teachers with easy access to information about all aspects of the achievement testing program. Sections in the bulletin contain information pertaining to schedules and significant dates; security and test rules; test administration and directives; test accommodations; field testing; resources and web documents; calculator and computer policies; test marking and results; samples, forms, and letters; and Learner Assessment contacts.

Subject Bulletins

At the beginning of each school year, Subject Bulletins are posted on the Alberta Education web site for all achievement test subjects for grades 3, 6, and 9. Each bulletin provides descriptions of assessment standards, test design and blueprinting, and (for grades 3, 6, and 9 English Language Arts) scoring guides as well as suggestions for preparing students to write the tests and information about how teachers can participate in test development activities.

Writing Samples

For achievement tests in grades 3, 6, and 9 English Language Arts, writing samples have been designed to be used by teachers and students to enhance students' writing and to assess this writing relative to the standards inherent in the scoring guides for the *Part A: Writing* achievement tests. The writing samples documents contain sample responses with scoring rationales, student self-assessment checklists, and scoring categories and criteria for the writing assignments.

Previous Achievement Tests and Answer Keys

All January achievement tests (parts A and B) for Grade 9 semestered students are secured and must be returned to Alberta Education. All May/June achievement tests are secured except Part A of grades 3, 6, and 9 English Language Arts. Unused or extra copies of only these Part A tests may be kept at the school after administration.

Parent Guides

Each school year, print versions of the Parent Guide to Provincial Achievement Testing for grades 3, 6, and 9 are mailed to schools and posted on the Alberta Education web site. Each guide presents answers to frequently asked questions about the achievement testing program; descriptions and sample questions for each achievement testing subject; and excerpts from the Curriculum Handbook for Parents identifying what students should know and be able to do in each subject by the end of grades 3, 6, and 9.

Involvement of Teachers

Teachers of grades 3, 6, and 9 are encouraged to take part in a variety of activities related to the achievement testing program. These activities include item development, test validation, field testing, and marking. In addition, regional consortia can make arrangements for teacher in-service workshops on topics such as Interpreting Achievement Test Results to Improve Student Learning.

2006 Achievement Test Questions

The questions presented in this document are from the previously secured 2006 Grade 3 Mathematics Achievement Test and are representative of the questions that form these tests. These questions are released by Alberta Education.

Grade 3 Achievement Test

2006

Mathematics

2006 Test Blueprint and Item Descriptions

The following blueprint shows the reporting categories and test sections (curricular content areas) by which questions were classified on the 2006 Grade 3 Mathematics Achievement Test.

General Outcomes	**Knowledge**	**Skills**	**Number of Questions/ Percent of Test**
Number • Develop a number sense for whole numbers 0 to 1000, and explore fractions (fifths and tenths) • Apply an arithmetic operation (addition, subtraction, multiplication or division) on whole numbers, and illustrate its use in creating and solving problems • Use and justify an appropriate calculation strategy or technology to solve problems	1, 2, 5, 7, 27	8, 12, 13, 17, 22, 24, 25, 35, 40	**17** **35%**
Patterns and Relations • Investigate, establish and communicate rules for numerical and non-numerical patterns, including those found in the home, and use these rules to make predictions	31, 33,	6, 9, 19, 23	**6** **15%**
Shape and Space • Estimate, measure and compare, using whole numbers and primarily standard units of measure • Describe, classify, construct and relate 3-D objects and 2-D shapes • Use numbers and direction words to describe the relative positions of objects in one dimension, using everyday contexts	11, 14, 26, 34	3, 4, 10, 28, 29, 32, 37, 39	**12** **30%**
Statistics and Probability • Collect first- and second-hand data, display the results in more than one way, and interpret the data to make predictions • Use simple probability experiments, designed by others, to explain outcomes	18, 21	15, 16, 20, 30, 36, 38	**8** **20%**
Number of Questions	17	27/26	43/100%
Percent of Test	39%	61%	**100%**

The table below provides information about each question: the keyed response, the difficulty of the item (the percentage of students who answered the question correctly), the reporting category, the language function, and the item description.

Question	Key	Diff. %	Reporting Category	Curricular Content Area (Concept)	Item Description
1	B	67.4	K	N	Identify the base-ten block representation of a given 3-digit number
2	A	88.1	K	N	Use addition with regrouping to solve a problem
3	B	83.1	S	SS	Determine the mass, in kg, of a given pictured object required to balance a scale
4	B	79.2	S	SS	Measure the perimeter of a given object using standard units
5	C	90.5	K	N	Use repeated addition or multiplication to solve a word problem
6	A	68.1	S	PR	Determine the maximum number of pairs that can be made given 2 different sets of pictured objects
7	C	90.0	K	N	Identify the expanded notation that is equivalent to a given 3-digit number
8	D	84.1	S	N	Calculate the sum of four 2-digit numbers to solve a problem involving a number line
9	D	83.8	S	PR	Use a number line to complete a number pattern
10	B	78.6	S	SS	Identify the shape and name of a 3-D object given the number of faces
11	D	77.5	K	SS	Identify two 3-D objects that have the same number of vertices
12	A	59.3	S	N	Solve a 3-digit subtraction problem with regrouping and select the correct base ten block representation using regrouping
13	B	64.4	S	N	Calculate the height of an object in cm, counting by 25s
14	B	86.5	K	SS	Determine a path on a grid using cardinal directions
15	A	80.6	S	SP	Determine the likelihood of an outcome using the terms likely, certain, unlikely, impossible
16	C	61.0	S	SP	Obtain new information from data given in a chart, apply addition to two different sets of numbers and subtract the sums
17	A	66.0	S	N	Use understanding of even numbers to determine a fraction involving tenths
18	C	79.1	K	SP	Organize data in ascending order based on information given in a bar graph
19	D	69.7	S	PR	Use three given attributes to select the correct number
20	C	91.8	S	SP	Determine the ascending rank order of data presented in a tally graph
21	C	87.2	K	SP	Select the tally chart that matches information presented in a chart
22	A	76.5	S	N	Use information presented in a chart to determine the ordinal position of given numbers

Question	Key	Diff. %	Reporting Category	Curricular Content Area (Concept)	Item Description
23	B	78.2	S	PR	Identify and extend a visual pattern
24	A	77.1	S	N	Use information in a bar graph to solve a subtraction problem involving 3-digit numbers
25	B	81.3	S	N	Use information in a chart involving length to determine two numbers that have a sum equal to a third number
26	C	69.5	K	SS	Use the most appropriate standard unit using length
27	D	70.4	K	N	Solve a problem using subtraction with 3-digit regrouping
28	D	66.5	S	SS	Calculate the temperature to the nearest degree C and read the correct temperature on a thermometer
29	C	84.0	S	SS	Apply terms of direction such as north, south, east or west to a given map
30	A	85.8	S	SP	Calculate a sum using data given in a chart to obtain new information
31	B	76.9	K	PR	Determine the rule for a number pattern
32	B	72.5	S	SS	Measure time in minutes that will elapse for a given activity
33	B	68.2	K	PR	Solve a problem using an addition pattern
34	C	80.2	K	SS	Measure the width of an object using cm
35	B	74.3	S	N	Solve a problem using subtraction with 2-digit numbers using regrouping
36	C	74.0	S	SP	Determine the likelihood of an outcome using the terms always, likely, unlikely and never
37	D	75.4	S	SS	Calculate the total value of coins given up to $10.
38	D	70.8	S	SP	Make a prediction of the most likely outcome based on visual information
39	B	85.1	S	SS	Calculate the total cost of items in dollars and cents using information given in a chart
40	A	72.1	S	N	Solve a problem by using subtraction with 3-digit regrouping

Grade 3 Achievement Test

Mathematics

Description

This test has two sections. Section A has 20 questions.
Section B has 20 questions.

You will have 60 minutes to complete this test. Your teacher will give you a break between Section A and Section B. You may take up to 30 extra minutes to complete this test if you need more time.

Instructions

- You will need a pencil, eraser, and ruler. Use **ONLY** an HB pencil.
- *Listen to* each question carefully.
- You may underline any key words that help you to answer the questions.
- You may use scrap paper to work out your answers.
- You may use manipulatives and a calculator when answering the questions.
- Choose the **BEST** or **CORRECT** answer.
- Mark your answer in this booklet by filling in the circle next to your answer. Read the examples on the next two pages to see how to do this.
- If you change an answer, erase your first mark **COMPLETELY**.
- When you have finished the test, go back and **CHECK** that you answered every question.
- Follow along as you listen to the story that comes before the questions in Section A.

2006

Example 1

The Pizza Place sold 275 pizzas one week.
It sold 326 pizzas the next week.

How many pizzas did The Pizza Place sell during the two weeks?

- ○ 51
- ○ 591
- ● 601
- ○ 691

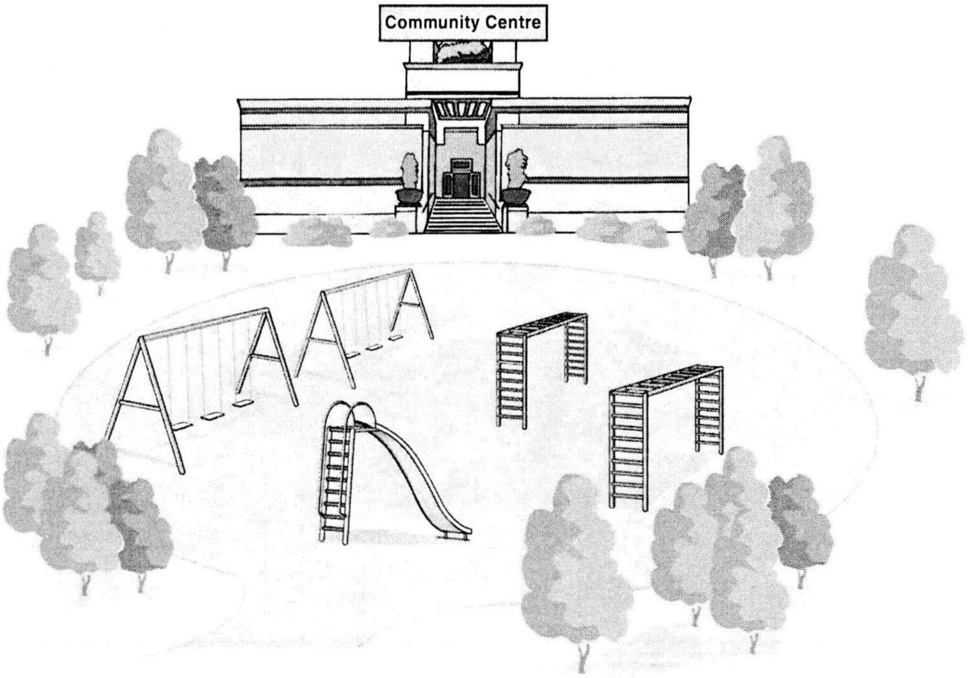
The correct answer in this example is **601**. The circle beside the correct answer has been filled in.

SECTION A

Follow along as your teacher reads this page aloud.

Our class is exploring different ways to show how we understand and learn math.

First, we will go to the library to gather information and to listen to a math story. The library has some special displays for us to view. Next, we will go to the playground and the park. The last place we will visit is the community centre to collect information that we can use for our math projects.



SECTION A

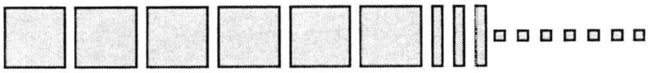
1. There are 736 books about animals in the library.

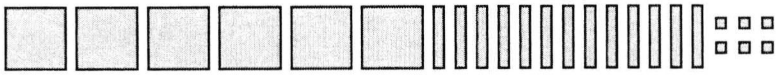
□ = 100 books

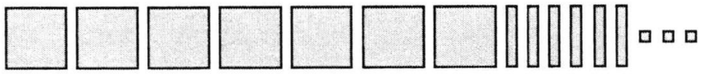
▯ = 10 books

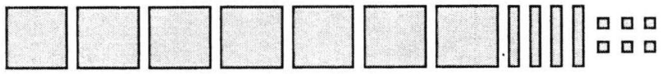
▫ = 1 book

Which of the following base-10 blocks represents the number 736?

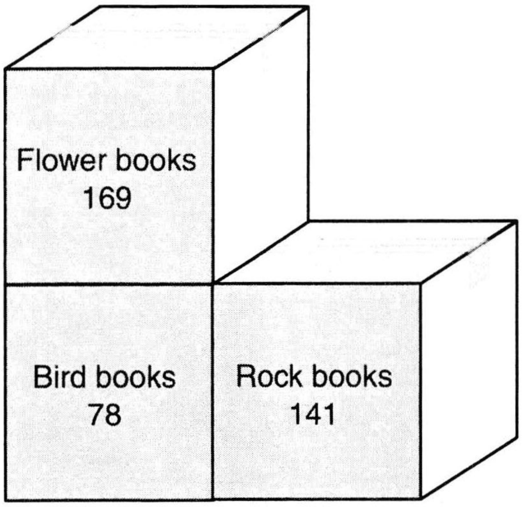
○ 

○ 

○ 

○ 

2. There are three boxes of books for the library.



What is the total number of flower and rock books in the boxes?

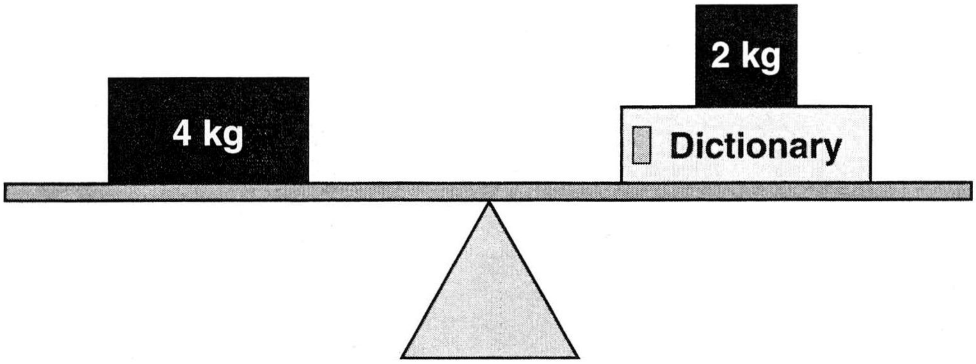
○ 310

○ 300

○ 210

○ 200

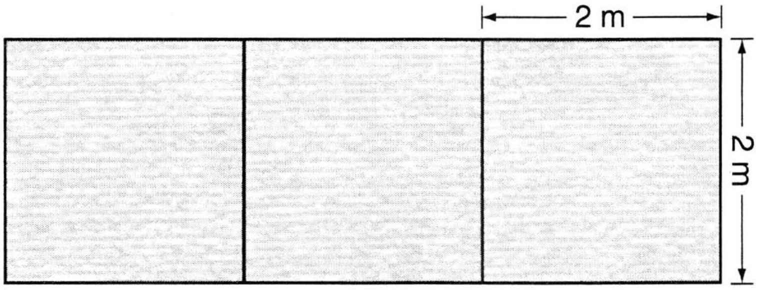
3. A student finds the mass of a dictionary.



The mass of the dictionary is

- ○ 1 kg
- ○ 2 kg
- ○ 5 kg
- ○ 6 kg

4. Three floor mats are placed together to make one larger mat for the children to sit on.

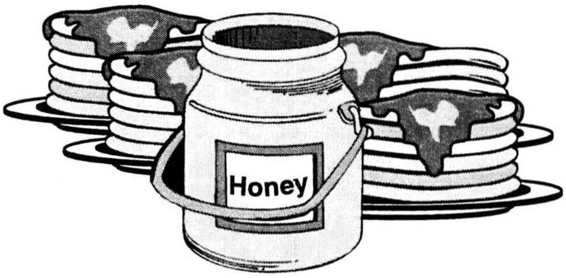


The perimeter of the larger mat is

- ○ 12 m
- ○ 16 m
- ○ 20 m
- ○ 24 m

5. The teacher reads a story to our class about 4 bears.

Each bear in the story eats 6 pancakes.



Altogether, how many pancakes do the 4 bears eat?

- ○ 18
- ○ 20
- ○ 24
- ○ 28

6. In the story, Papa Bear has 4 T-shirts and 3 pairs of shorts.

How many different outfits can Papa Bear make with his T-shirts and shorts?

○ 12

○ 9

○ 7

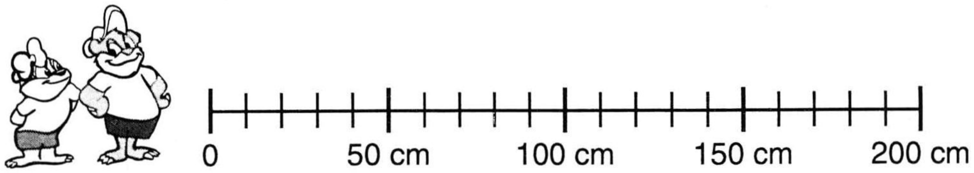
○ 4

7. Sister Bear and Brother Bear have 379 marbles.

The number 379 can be written as

- ○ 3 + 7 + 9
- ○ 30 + 70 + 90
- ○ 300 + 70 + 9
- ○ 300 + 7 + 90

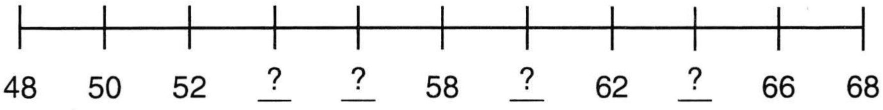
8. Brother Bear tosses a marble 50 cm and Sister Bear tosses another marble 30 cm. Then Brother Bear tosses his marble 70 cm and Sister Bear tosses her marble 20 cm.



What is the total distance in centimetres that Brother Bear and Sister Bear toss the marbles?

- ○ 100 cm
- ○ 120 cm
- ○ 150 cm
- ○ 170 cm

9. A number line is shown in the math display.



Starting from the left, the missing numbers in the number pattern shown above are

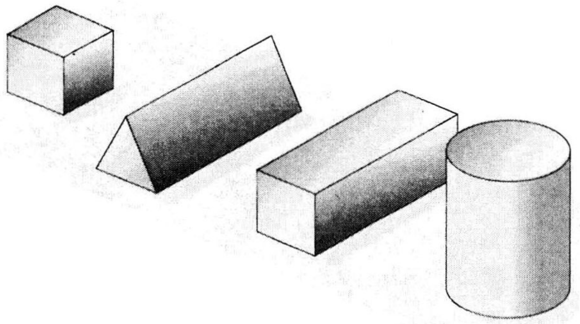
○ 53, 54, 59, and 64

○ 53, 54, 59, and 63

○ 54, 56, 60, and 63

○ 54, 56, 60, and 64

10. A math project about 3-D objects is on display in the library.



Which of the 3-D objects above has 5 faces?

○ The cube

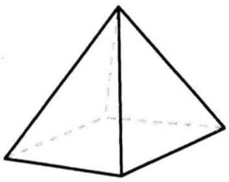
○ The triangular prism

○ The rectangular prism

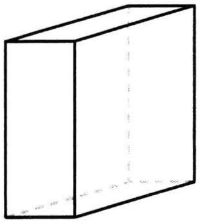
○ The cylinder

11. Students play with the following 3-D objects.

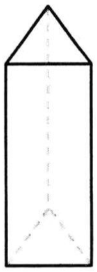
A



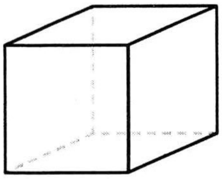
B



C



D



Which two 3-D objects above have the same number of vertices?

○ A and C

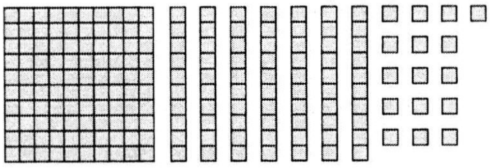
○ A and D

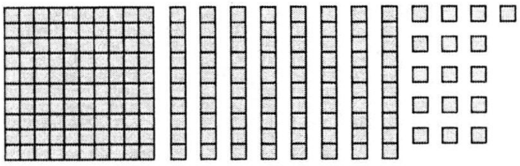
○ B and C

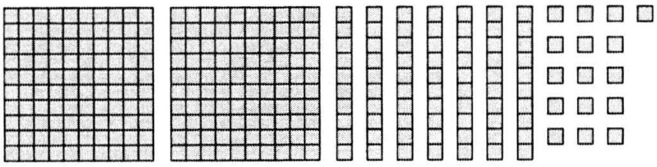
○ B and D

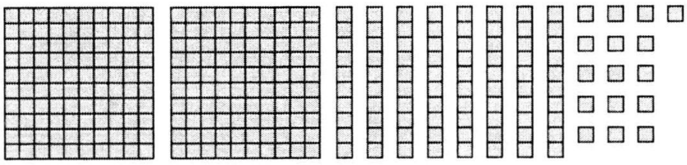
12. On Monday, 354 students were at the playground. On Tuesday, 168 students were at the playground.

Which of the following sets of base-ten blocks shows how many fewer students were at the playground on Tuesday than on Monday?

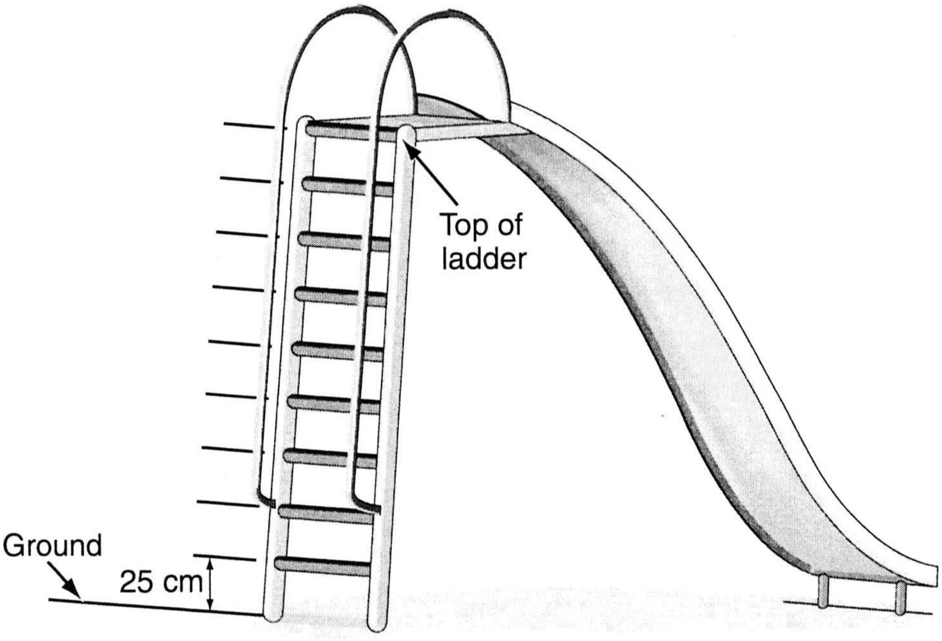
○ 

○ 

○ 

○ 

13. The space between each step on the ladder is 25 cm.



What is the height from the ground to the top of the ladder?

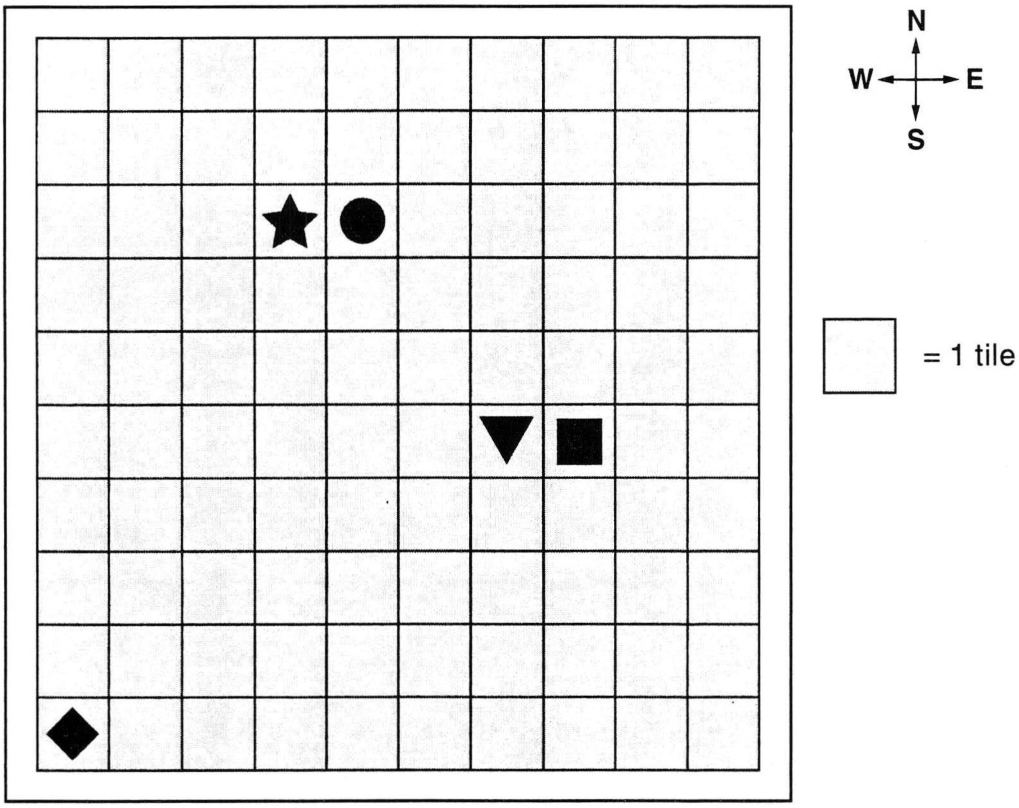
○ 250 cm

○ 225 cm

○ 200 cm

○ 175 cm

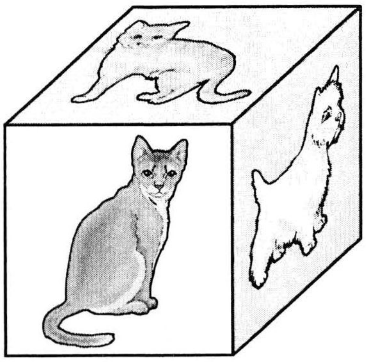
14. The diagram shows a game board that is built into a sidewalk.



If Pascal starts at the ◆ and moves east 4 tiles, then north 7 tiles, which shape will he land on?

- ○ ★
- ○ ●
- ○ ▼
- ○ ■

15. A student rolls a six-sided cube. Each side has a picture of an animal on it. There are four dog pictures and two cat pictures on the cube.



What is the probability that a dog picture will be on the top when the cube stops rolling?

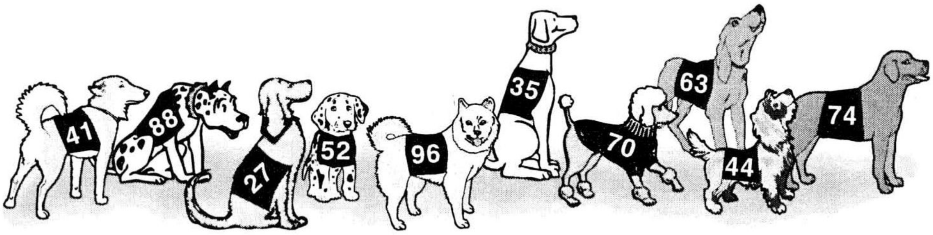
- ○ Likely
- ○ Certain
- ○ Unlikely
- ○ Impossible

Skipping Ropes	
Colour	**Number**
Blue	3
Red	6
Purple	11
Green	26

16. How many more red and green skipping ropes are there than blue and purple skipping ropes?

- ○ 28
- ○ 22
- ○ 18
- ○ 12

17. There is a dog walk at the park today. We see 10 dogs that are waiting for their owners.



What fraction of the dogs are wearing an EVEN number?

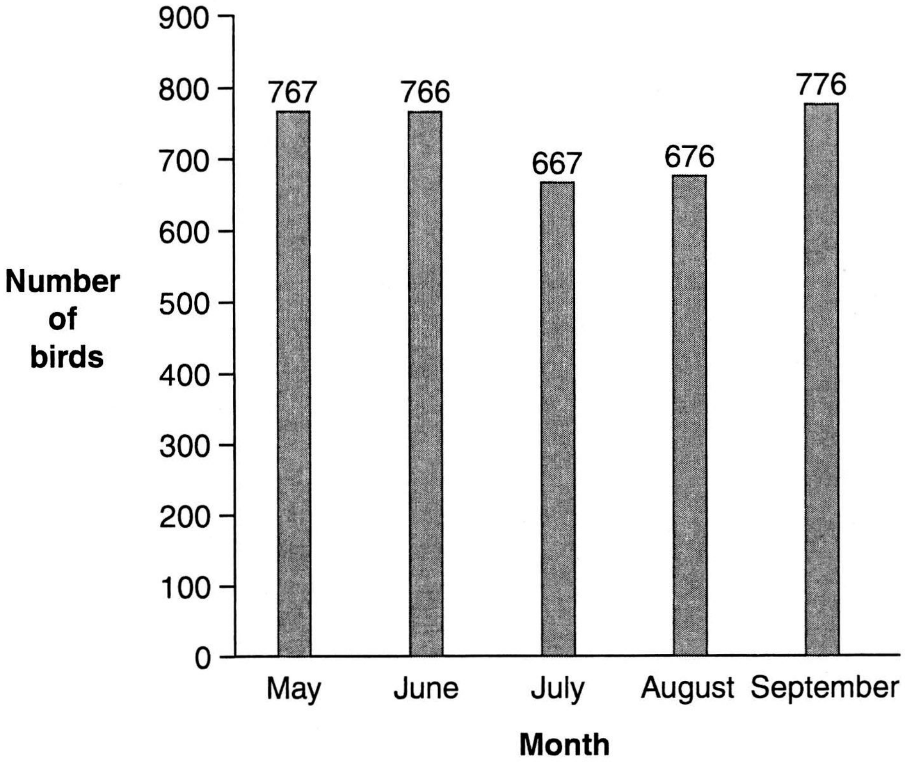
○ $\frac{6}{10}$

○ $\frac{5}{10}$

○ $\frac{4}{10}$

○ $\frac{3}{10}$

18. The following bar graph shows the number of birds in the park over five months.



Shown in order from the LEAST to the GREATEST, the numbers are

○ 676, 667, 766, 767, 776

○ 676, 667, 767, 766, 776

○ 667, 676, 766, 767, 776

○ 667, 676, 767, 766, 776

19. Some students enter a contest to guess the number of pine cones in a pail. The clues are posted on a chart.

The number of pine cones is
- greater than 205
- less than 310
- an even number

The winning number could be

○ 204
○ 215
○ 301
○ 306

20. The teacher surveys the students to find out which colour of flower is their favourite.

Favourite Colour of Flower	
Colour	**Number of Votes**
Pink	𝍸 𝍸
Red	𝍷𝍷𝍷𝍷
Blue	𝍸 𝍸 𝍷𝍷𝍷
White	𝍷𝍷𝍷

Listed in order from the LEAST favourite colour to the MOST favourite colour, the colours are

○ red, white, pink, and blue
○ red, white, blue, and pink
○ white, red, pink, and blue
○ white, pink, red, and blue

END OF SECTION A

You may go back to check your answers.

SECTION B

21. There are five types of frogs in a pond.

Type of Frog	Number of Frogs
Mink frog	7
Leopard frog	11
Green frog	9
Red-legged frog	13
Wood frog	6

Which of the following tally charts shows the same information as the chart above?

Type of Frog	Number of Frogs
Mink frog	𝍸 ||
Leopard frog	𝍸 𝍸 |||
Green frog	𝍸 ||||
Red-legged frog	𝍸 𝍸 |
Wood frog	𝍸 ||

○

Type of Frog	Number of Frogs
Mink frog	𝍸 ||
Leopard frog	𝍸 𝍸 |
Green frog	𝍸 ||||
Red-legged frog	𝍸 𝍸 |||
Wood frog	𝍸 ||

○

Type of Frog	Number of Frogs
Mink frog	𝍸 ||
Leopard frog	𝍸 𝍸 |
Green frog	𝍸 ||||
Red-legged frog	𝍸 𝍸 |||
Wood frog	𝍸 |

○

Type of Frog	Number of Frogs
Mink frog	𝍸 ||
Leopard frog	𝍸 𝍸 |||
Green frog	𝍸 ||||
Red-legged frog	𝍸 𝍸 |
Wood frog	𝍸 |

○

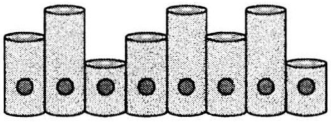
22. The following chart shows the distances that four frogs leap.

Frog	Distance of Leap
A	47 cm
B	89 cm
C	93 cm
D	35 cm

Which frog has the third-longest leap?

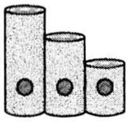
- ○ Frog A
- ○ Frog B
- ○ Frog C
- ○ Frog D

23. Logs are arranged around a pond in the pattern shown below.

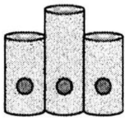


? ? ?

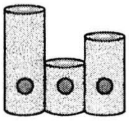
If the pattern continues, then the next three logs will be



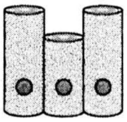
○



○

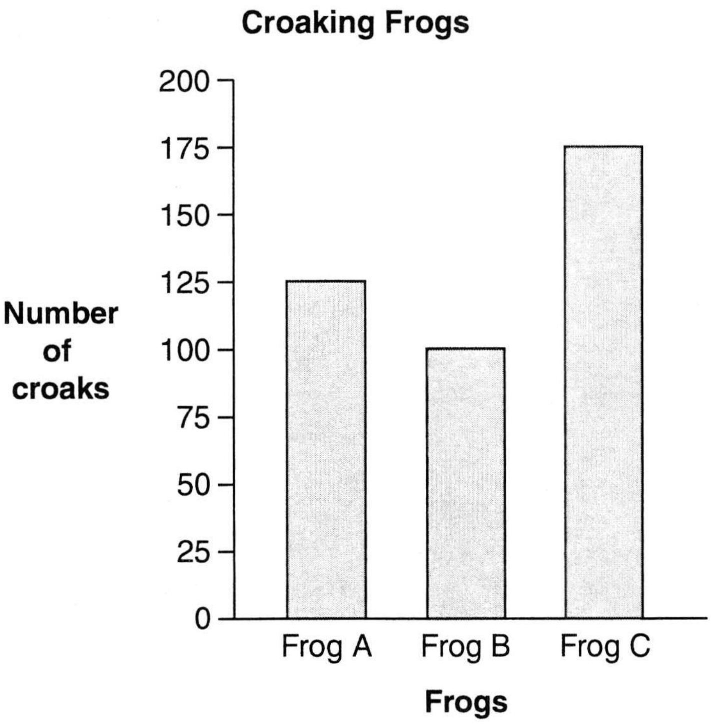


○



○

24. Students record the number of times that three frogs croak in one hour.



How many more times did Frog C croak than Frog A?

○ 50
○ 75
○ 200
○ 300

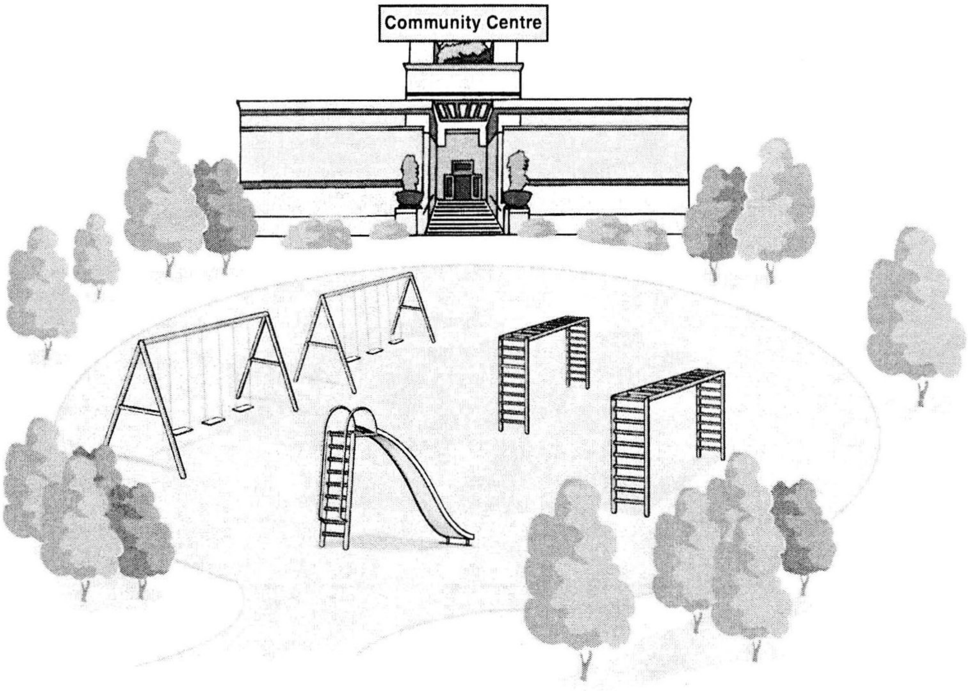
25. Frogs grow to different lengths.

Type of Frog	Length of Frog
Mink frog	7 cm
Leopard frog	11 cm
Green frog	9 cm
Red-legged frog	13 cm
Wood frog	6 cm

The length of the red-legged frog is the same as the length of which two frogs together?

- ○ Mink frog and green frog
- ○ Mink frog and wood frog
- ○ Leopard frog and wood frog
- ○ Green frog and wood frog

26. A class walks from the playground to the community centre.



The distance between the playground and the community centre would BEST be measured in

- ○ centimetres
- ○ decimetres
- ○ metres
- ○ kilometres

27. Altogether, 932 children went to the community centre last week.

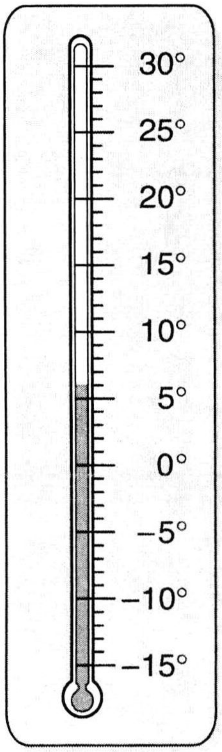
There were 478 boys.

How many girls went to the community centre last week?

- ○ 564
- ○ 554
- ○ 464
- ○ 454

28. The temperature outside is 15 °C. Inside the community centre, the temperature is 6 °C **warmer**.

Which of the following thermometers shows the temperature inside the community centre?



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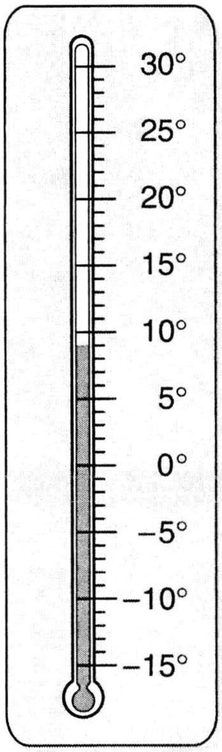
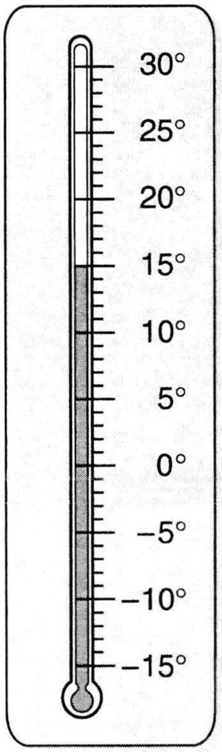


○



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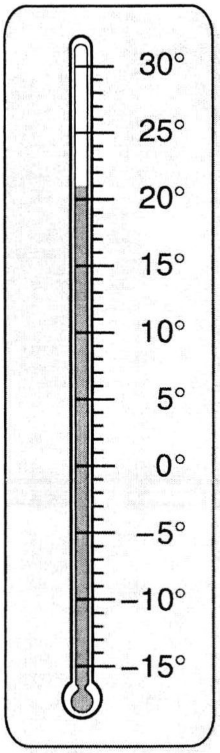
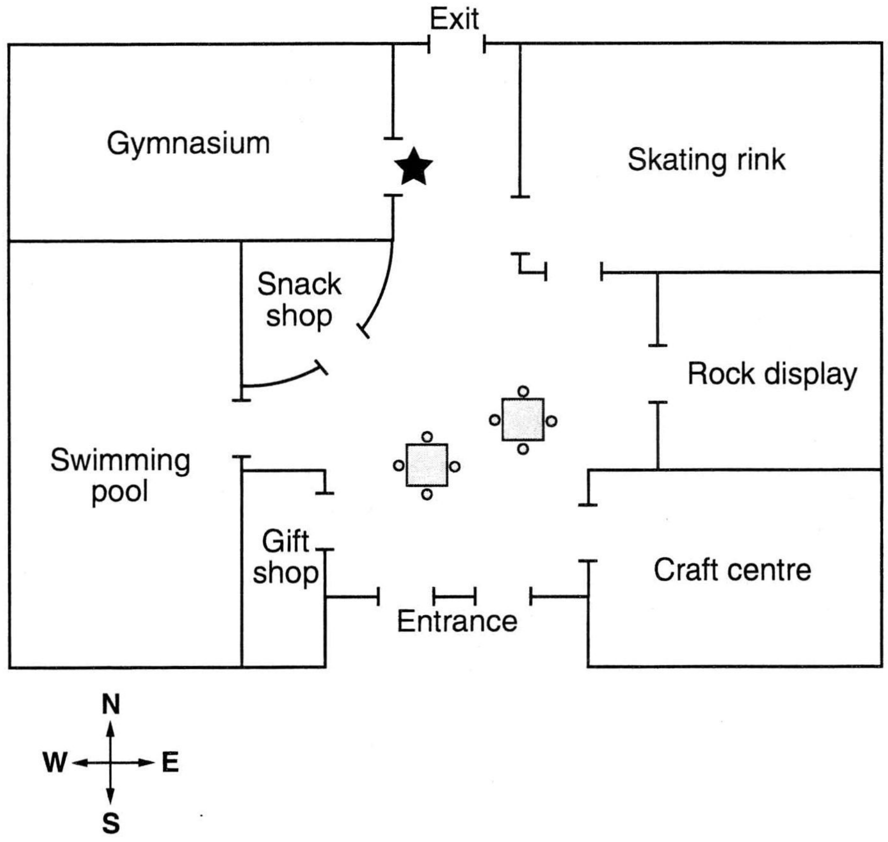


○

29. Some students walk toward a swimming pool.



If the students start at the ★, then in which directions would the students have to walk to reach the swimming pool?

- ○ North and west
- ○ North and east
- ○ South and west
- ○ South and east

30. A chart provides information about the number of laps and the time students have taken to swim the laps.

Timed Laps		
Name of Student	**Number of Laps**	**Swim Time (min)**
Andy	7	15
John	8	14
Marie	6	13
Sue	9	16

Altogether, how many laps did the four students swim?

- ○ 30
- ○ 34
- ○ 48
- ○ 58

31. **The following numbers form a pattern.**

32, 39, 46, 53, 60

The rule for the number pattern above is to add

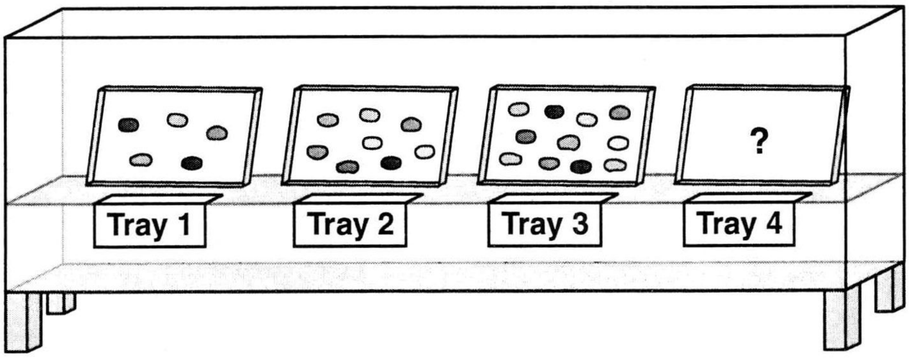
- ○ 8 to each number
- ○ 7 to each number
- ○ 6 to each number
- ○ 5 to each number

32. A presentation about rocks begins at 1:15 P.M. and ends at 2:00 P.M.

How long is the presentation?

- ○ 60 minutes
- ○ 45 minutes
- ○ 30 minutes
- ○ 15 minutes

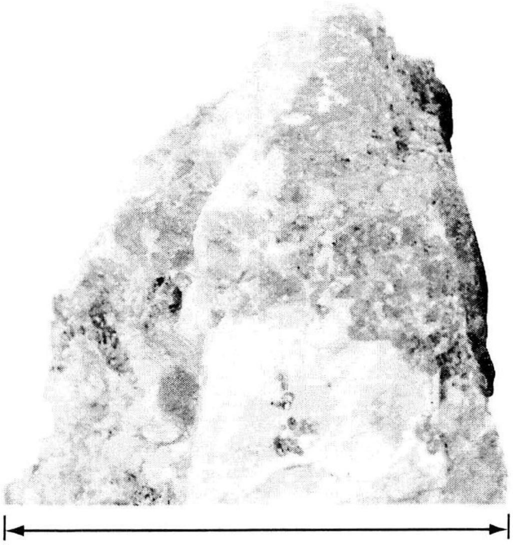
33. Four trays of rocks are displayed in a cabinet.



If the pattern continues, then how many rocks will be on tray 4?

- ○ 13
- ○ 14
- ○ 15
- ○ 16

34. Some students measure the width of a rock.



The width of the rock shown above is

○ 9 cm
○ 8 cm
○ 7 cm
○ 6 cm

35. A poster shows pictures of 90 rocks. There are 32 red rocks.

How many rocks are not red?

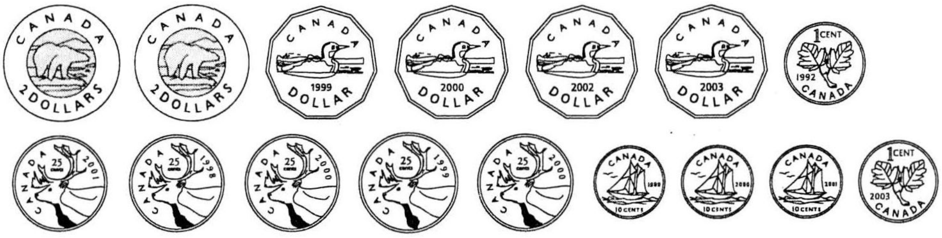
○ 52
○ 58
○ 62
○ 68

36. There are 18 brown rocks, 11 grey rocks, 5 black rocks, and 3 white rocks in a box. Nancy reaches for a rock without looking in the box.

What is the probability that Nancy will pick a white rock on her first try?

○ Always
○ Likely
○ Unlikely
○ Never

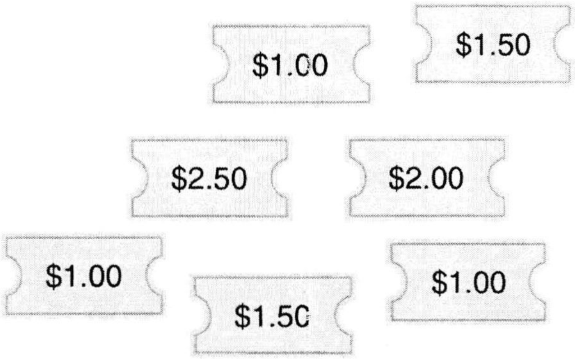
37. Leah pays for a book about rocks with the following coins.



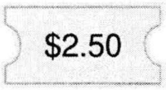
How much did Leah pay for the book?

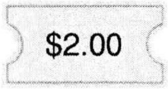
○ $8.32
○ $8.57
○ $9.32
○ $9.57

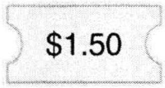
38. A student buys the following snack tickets and puts them in his pocket. Without looking, the student pulls a ticket out of his pocket.

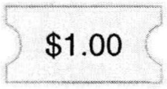


Which ticket is the student MOST LIKELY to pull out of his pocket?

○ 

○ 

○ 

○ 

39. A student buys snacks at a Snack Shop.

Snack Shop	
Type of Snack	**Cost**
Fruit	$0.50
Bag of popcorn	$1.00
Cookie	$1.50
Bottle of water	$2.00

If the student buys a fruit, a bag of popcorn, and a bottle of water, then the total cost is

○ $3.00
○ $3.50
○ $4.50
○ $5.00

40. Zak's full water bottle holds 355 mL of water. After Zak takes a drink, 175 mL of water is left in the bottle.

How much water did Zak drink?

○ 180 mL
○ 220 mL
○ 280 mL
○ 530 mL

END OF SECTION B

You may go back to check your answers.